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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/830,031	04/23/2004	Winston Ki-Cheong Mok	PAT 2137-2	7518
26123 7590 05/28/2009 BORDEN LADNER GERVAIS LLP Anne Kinsman WORLD EXCHANGE PLAZA 100 QUEEN STREET SUITE 1100 OTTAWA, ON K1P 1J9 CANADA			EXAMINER PHAM, BRENDA H	
			ART UNIT 2416	PAPER NUMBER
			NOTIFICATION DATE 05/28/2009	DELIVERY MODE ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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<b>Office Action Summary</b>	<b>Application No.</b> 10/830,031	<b>Applicant(s)</b> MOK ET AL.	
	<b>Examiner</b> BRENDA PHAM	<b>Art Unit</b> 2416	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 23 April 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-36 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3,5-10,12-14,17-19,21,23-27 and 29-36 is/are rejected.
- 7) ☒ Claim(s) 4,11,15,16,20,22 and 28 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### DETAILED ACTION

1. Claims 1-36 are pending.

#### ***Claim Rejections - 35 USC § 101***

2. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

3. Claim 36 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Claim 36 is directed to a functional descriptive materials: "Data Structures" representing Descriptive Material Per Se or Computer Program Represent Computer Listing Per Se.

Claim 36 recite "ingress logic" for splitting a fanout of ingress data and scrambling logic for scrambling the first and second sub-groups according to a scrambling sequence function. Data structures not claimed as embodied in computer-readable media are descriptive material per se and are not statutory because they are not capable of causing functional change in the computer, see, e.g., Warmerdan, 33 F 3.d at 1361, 31 USPQ2d at 1760 (claim to a data structure per se held nonstatutory). Such claimed data structures do not define any structural.

#### ***Claim Rejections - 35 USC § 101***

4. 35 U.S.C. 101 reads as follows:

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Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

5. Claims 25-35 are rejected under 35 U.S.C. 101 because of not falling within one of the four statutory categories of invention. While the claims recite a series of steps or acts to be performed, A statutory "process" under 35 U.S.C. 101 must (1) be tied to particular machine, or (2) transform underlying subject matter (such as an article or material) to a different state or thing, see page 10 of *In Re Bilski* 88 USPQ2d 1385. The instant claims are neither positively tied to particular machine that accomplishes the claimed method steps nor transform underlying subject matter, and therefore do not qualify as a statutory process. In this case, the method claim 25 including steps of splitting a fanout of ingress data and scrambling the first and second sub-groups is broad enough that the claim could be completely performed mentally, verbally or without a machine nor is any transformation apparent.

***Claim Rejections - 35 USC § 112***

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 5 and 29 recite the limitation "the first and second scrambling patterns.

There is insufficient antecedent basis for this limitation in the claim.

***Claim Rejections - 35 USC § 102***

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

9. Claims 1, 3, 24-25, 27 and 36 are rejected under 35 U.S.C. 102(e) as being anticipated by O'Loughlin et al. (US 6,771,655 B1).

Regarding claims 1, 24-25 and 36, O'Loughlin et al. disclose a data transmission apparatus and method for transmitting data in a data transmission apparatus having ingress and egress ports, comprising:

splitting a fanout of ingress data, from each ingress port to the egress ports, into a first sub-group and a second sub-group; and

scrambling the first and second sub-groups according to a scrambling sequence function into first and second scrambled data, respectively, the first and second scrambled data, when considered together, having a constant number of bits that are toggled with respect to time (**Figure 1 shows a splitting of ingress data into sub-group**).

Regarding claims 3 and 27, O'Loughlin et al. discloses wherein the scrambling sequence function includes first and second scrambling patterns for scrambling the first and second sub-group, respectively. (See Figure 15, "bit stream pattern").

10. Claims 1-10, 12-14, 17-19, 21, 23-36 are rejected under 35 U.S.C. 102(e) as being anticipated by Pike (US 7,209,477 B2).

With respect to claims 1, 24-25, 36, Pike discloses a data transmission apparatus having ingress and egress ports, and comprising **(refer to FIG. 4B and 7):**

a scrambler **(410 of FIG. 4B)** for splitting a fanout of ingress data, from each ingress port to the egress ports, into a first sub-group **(414 of FIG. 4B)** and a second sub-group **(414 of FIG. 4b)** and for scrambling the first and second sub-groups according to a scrambling sequence function to provide a combined scrambled output of the first and second sub-groups having a constant number of toggled bits with respect to time **(see FIG. 4B, col. 7, lines 1-25, see also FIG. 6).**

With respect to claims 2-3, 6 and 26-27, 30, Pike further teaches wherein the first and second sub-groups have substantially equal parasitic capacitance **(see FIG. 4B and 7, col. 30-50).**

With respect to claims 5 and 29, Pike teaches wherein the first and second scrambling patterns each have a length of 2 scrambling elements

With respect to claims 7-10, 31-34, Pike further teaches wherein the scrambler further comprises ingress port logic for splitting the ingress data **(408)** into a plurality of groups, a first group including the first and second sub-groups **(N/M channels 412)**, and a second group including third and fourth sub-groups **(HDLC 418)**, the scrambler for scrambling sequence function to provide a combined scrambled output of the third and fourth sub-groups has a second constant number of toggled bits with respect to time **(see FIG. 4B, also see FIG. 5, FIG. 5 shows FPGA splits TDM signal 408 into four sub-group CPLD B1...B4, each of the sub-group further splits into LC1...LC4).** **("The collective datastream on link 408 is provided to FPGA 410 which splits datastream into four separate datastreams on channels 412. Each separate datastream on each channel 412 contains datastream for 4 HDLC slots destined for demultiplexers 414 associated with each subshelf 122.)**

With respect to claims 12 and 34, Pike further teaches first and second sub-group interleavers for providing the first and second sub-group scrambled outputs, respectively. **("The collective datastream on link 408 is provided to FPGA 410 which splits datastream into four separate datastreams on channel 412. Each separate datastream on each channel 412 contains datastreams for 4 HDLC slots destined for demultiplexers 414 associated with each sub-shelf 122. col. 8, lines 35-45)**

With respect to claims 13, 14, 35, Pike further teaches egress logic for receiving and retransmitting scrambled data received from the scrambler **(CPLD, 414 receiving data from channel 412 and retransmitting the data to HDLC 418, see FIG. 4B).**

With respect to claims 17-19, pike further teaches a a de-scrambler for receiving scrambled data, adn for de-scrambling the scrambled data based on the scrambling sequence function **(see figure 4Ba and 7).**

With respect to claim 21, Pike teaches wherein the de-scrambler selectively de-scrambles the first-sub group and the second sub-group of an egress port group in response to a configuration signal **("Similar to demultiplexer 410, TDM demultiplexer 414 utilizes the bit counter signal and the channel counter signal to determine which incoming part of the datastream on channel 412 is sent on which outgoing channel 416." col. 7, line 13-16)**

With respect to claim 23, Pike further teaches wherein the de-scrambler comprises a counter for determining the scrambling sequence function **("a bit counter signal and a channel counter signals are associated with the TDM stream. The bit counter signals and the channel counter signal are used by demultiplexer 410 to identify which bits from controller 404 (or which bits from registers within FPGA 410) are inserted into which channel 412 at the correct frame." col. 6, lines 40-45)**



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***Allowable Subject Matter***

11. Claims 4, 11, 15-16, 20, 22 and 28 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Conclusion***

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brenda Pham whose telephone number is (571) 272-3135. The examiner can normally be reached on Monday-Friday from 9:00 to 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rick Ngo, can be reached on (571) 272-3139.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (571) 272-2600.

May 24, 2009

***/Brenda Pham/  
Primary Examiner, Art Unit 2416***